

Claims

1. A computerized method for transcoding a multimedia presentation for delivery and display

comprising the steps of:

analyzing the content of the multimedia presentation; and

performing transcoding based on said analyzing.

2. The method of Claim 1 wherein said performing transcoding comprises the steps of:
selecting at least one transcoding alternative based on the results of said analyzing; and
transcoding the content according to said at least one transcoding alternative.

3. The method of Claim 1 wherein said performing transcoding comprises the steps of:
selecting less than all of said content for transcoding based on said analysing; and
transcoding less than all of said content.

4. The method of Claim 1 wherein said analyzing comprises the steps of:
separating a multimedia document into individual multimedia objects; and
analyzing each multimedia object individually.

5. The method of Claim 4 further comprising the steps of:
separating the multimedia objects into individual modal elements; and
analyzing each modal element of each multimedia object independently.

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6. The method of Claim 4 further comprising the steps of:
identifying relationships between individual multimedia objects within a multimedia document; and
transcoding related multimedia objects as a group.

7. The method of Claim 5 further comprising the steps of:
identifying relationships between individual modal elements of multimedia objects; and
transcoding the related modal elements as a group.

8. The method of Claim 1, wherein the multimedia content is a document published on the World-Wide Web.

9. The method of Claim 1, wherein the content analysis is performed off-line and the results stored embedded in or along with the multimedia content.

9. The method of Claim 1, wherein the multimedia content comprises visual content.

10. The method of Claim 9, wherein the content analysis classifies the visual content into at least one of image type, purpose and semantic classes.

11. The method of Claim 10, wherein the content analysis utilizes a decision-tree for classifying images into image type classes.

12. ~~The method of Claim 11 wherein the image type classes comprise color photos, color graphics, gray photos, gray graphics, black and white photos, and black and white graphics.~~

13. The method of Claim 12, wherein the content analysis procedure extracts color and texture features from the images.

14. The method of Claim 13, wherein image type classification is used to select from different methods for compression, size reduction, color reduction, substitution, and removal.

15. The method of Claim 13, wherein image purpose classification is used to select from different methods for compression, size reduction, color reduction, substitution and removal.

16. The method of Claim 1, wherein the transcoder adapts the content to the display, processing and storage constraints of the client devices.

17. The method of Claim 1, wherein the transcoder adapts the content to the bandwidth and connectivity constraints of the network.

18. The method of Claim 16, wherein the client device is a speech browser in an automotive vehicle.

19. The method of Claim 16 wherein the client device is a hand-held computer.

20. The method of Claim 16 wherein the client device is a smart phone.

5 21. The method of Claim 17, wherein the network connection uses a wireless link to the client device.

22. The method of Claim 21, wherein the client and network provides intermittent connectivity between the transcoder and client device.

23. A method as in claim 1, wherein the transcoding operation manipulates the data to generate an alternative version of it.

24. A method as in claim 1, wherein the transcoding operation selects an alternative version of data.

25. A system for providing transcoding of the content of a multimedia presentation comprising:

a content analysis component for analyzing the content of the multimedia presentation;

and

at least one transcoding component for performing transcoding of the content based on the analyzing.

~~26. The system of Claim 25 further comprising a content selection component connected to received input from the content analysis component and to select at least one transcoding option based on the input; and to instruct said at least one transcoding component to perform the at least one transcoding option.~~

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27. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for transcoding a multimedia presentation for delivery and display, said method comprising the steps of:

analyzing the content of the multimedia presentation; and
performing transcoding based on said analyzing.

28. The program storage device of Claim 27 wherein said performing transcoding comprises the steps of:

selecting at least one transcoding alternative based on the results of said analyzing; and
transcoding the content according to said at least one transcoding alternative.